increased distances from the poles, he states that in a circuit of ten inches of water, solution of sulphate of potassa placed four inches from the positive pole did not decompose; whereas when only two inches from that pole, it did render up its elements.[1]

220. When in 1826 Sir Humphry Davy wrote again on this subject, he stated that he found nothing to alter in the fundamental theory laid down in the original communication,[2] and uses the terms attraction and repulsion apparently in the same sense as before.[3]

221. Messrs. Riffault and Chompre experimented on this subject in 1807. They came to the conclusion that the voltaic current caused decompositions throughout its whole course in the humid conductor, not merely as preliminary to the recomppositions spoken of by Grotthuss and Davy, but producing final separation of the elements in the *course* of the current, and €lsewhere than at the poles. They considered the *negative* current as collecting and carrying the acids, etc., to the *positive* pole, and the *positive* current as doing the same duty with the bases, and collecting them at the *negative* pole. They likewise consider the currents as *more powerful* the nearer they are to their respective poles, and state that the positive current is *superior* in power to the negative current.[4]

222. M. Biot is very cautious in expressing an opinion as to the cause of the separation of the elements of a compound body.[5] But as far as the effects can be understood, he refers them to the opposite electrical states of the portions of the decomposing substance in the neighbourhood of the two poles. The fluid is most positive at the positive pole; that state gradually diminishes to the middle distance, where the fluid is neutral or not electrical; but from thence to the negative pole it becomes more and more negative.[6] When a particle of salt is decomposed at the negative pole, the acid particle is considered as acquiring a negative electrical state from the pole, stronger than that of the surrounding *undecomposed* particles, and is. therefore repelled from amongst them, and from out of that portion of the liquid towards the positive pole, towards which also it is drawn by the attraction of the

pole itself and
the particles of positive *undecomposed* fluid around it.[7]

[1] *Philosophical Transactions,* 1807, p. 42.
[2] *Ibid.* 1826, p. 383.
[3] *Ibid.* pp. 389, 407, 415.
[4] *Annales de CMmie,-i8o7,* torn. Ixiii. p. 83, etc.
[6] *Precis Elcmentaire de Physique,* 31110 Edition, 1824, torn. i. p. 641.
[0] *Ibid.* p. 637.
[7] *Ibid.* pp. 6.11, 642.